

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions, and listings, of claims in the captioned patent application:

Listing of Claims:

1. (Currently Amended) A method of managing a power supply for an electronic device, the power supply having a measuring circuit, a rechargeable battery source and an auxiliary power source, said method comprising the steps of:

~~implementing a measuring circuit to measure one or more~~ parametric data of the rechargeable battery source during operational charging and discharging cycles with the electronic device;

~~removing the rechargeable battery source from operation of the device;~~

checking for temporary removal of the rechargeable battery source from operation of the device; and

testing the measuring circuit for offset error ~~when, if power from the rechargeable battery source has been temporarily removed, before; and~~

resuming said ~~implementing step~~ measuring when the rechargeable battery has been replaced to operation of the device.

2. (Currently Amended) The method according to claim 1, wherein said testing ~~step~~ further ~~comprising comprises~~ the sub-step of correcting the measuring circuit ~~in the case of an~~ for the offset error.

3. (Currently Amended) The method according to claim 1, further comprising:

~~wherein the device can be temporarily powered by powering the device temporarily using~~ the auxiliary power source during said testing-step.

4. (Original) The method according to claim 1, wherein said parametric data includes cumulative charge.

5. (Original) The method according to claim 1, wherein said electronic device is an implantable medical device.

6. (Original) The method according to claim 5, wherein the implantable medical device is a prosthetic hearing implant system.

7. (Currently Amended) A power supply for an electronic device, said power supply comprising:

a rechargeable battery source configured for cyclical charging and discharging by said electronic device;

a measuring circuit ~~for measuring~~ configured to measure one or more parametric data during said charging and discharging;

an auxiliary power source ~~being able to power~~ configured to provide power to said electronic device independently of said battery source; ~~and~~

an isolation circuit for isolating said rechargeable battery source from said device;

a testing circuit for testing configured to test said measuring circuit for offset error; and

a reducer circuit for reducing configured to reduce current flow from said rechargeable battery to said device to a minimal value;

wherein said testing circuit is enabled during said isolation of said rechargeable battery from said device.

8. (Currently Amended) The power supply according to ~~claim 5~~ claim 7, wherein said testing circuit ~~corrects~~ is further configured to correct any offset error ~~before current is restored to said device from said rechargeable battery~~ while said rechargeable battery source is isolated from said device.

9. (Currently Amended) The power supply according to ~~claim 5~~ claim 7, wherein said parametric data includes cumulative charge.

10. (Original) The power supply according to claim 7, wherein said electronic device is an implantable medical device.

11. (Original) The power supply according to claim 10, wherein the implantable medical device is a receiver/stimulator unit of a prosthetic hearing implant system.

12. (Currently Amended) A system for operating a rechargeable battery, said system comprising:

~~current maintaining~~ means for maintaining current by delivering a predetermined current to said rechargeable battery until said rechargeable battery ~~reaches~~ is charged to a predetermined maximum voltage;

~~voltage maintaining~~ means for maintaining voltage by delivering decreasing step-function current a predetermined voltage to said rechargeable battery to maintain the maximum voltage until a predetermined minimum current is delivered to said delivered current reaches a predetermined minimum current said rechargeable battery;

~~determining~~ means for determining a cyclical charge value ~~delivered current to be delivered~~ to said rechargeable battery by said current maintaining means and said voltage maintaining means during a cycle; and

~~correction~~ means for correcting said determining means when the determined current charge is not being delivered to said rechargeable battery, ~~on the basis of said charge value~~.

13. (Currently Amended) The system according to claim 12, wherein said voltage maintaining means engages after said current maintaining means charges said rechargeable battery ~~reaches to~~ said predetermined maximum voltage ~~by said current maintaining means~~.

14. (Currently Amended) The system according to claim 12, wherein said determining means comprises ~~a current integration~~ means for integrating current delivered to said rechargeable battery.

15. (Original) The system according to claim 12, wherein said predetermined current and said predetermined minimum current are different.

16. (Original) The system according to claim 12, wherein said predetermined voltage and said predetermined maximum voltage are different.

17. (Original) The system according to claim 12, wherein said predetermined current may be dynamically adjusted based on parameters of said rechargeable battery.

18. (Original) The system according to claim 12, wherein said predetermined voltage may be dynamically adjusted based on parameters of said rechargeable battery.

19. (Original) The system according to claim 12, wherein said predetermined minimum current may be dynamically adjusted based on parameters of said rechargeable battery.

20. (Original) The system according to claim 12, wherein said predetermined maximum voltage may be dynamically adjusted based on parameters of said rechargeable battery.

21. (Original) The system according to claim 12, wherein said predetermined maximum voltage is less than 57.6 volts.

22. (Original) The system according to claim 12, wherein said predetermined minimum current is less than 1 ampere.

23. (Original) The system according to claim 12, wherein said rechargeable battery is used for an implantable medical device.

24. (Original) The system according to claim 23, wherein said implantable medical device is a prosthetic hearing implant.

25. (Original) The system according to claim 24, wherein said prosthetic hearing implant is a totally implantable prosthetic hearing implant.

26. (Currently Amended) An apparatus for characterizing a rechargeable battery, said apparatus comprising:

a current limited source for delivering, during a first charging stage, a current flow to said rechargeable battery, until said rechargeable battery ~~reaches~~ is charged to a predetermined maximum voltage;

a voltage limited source for maintaining, during a second charging stage, a substantially constant voltage ~~to said by said rechargeable battery, battery by delivering decreasing step-function current flow to the rechargeable battery until a current the current~~ flow delivered to said rechargeable battery is below a predetermined minimum current;

an integrator configured to integrate current flow delivered to said rechargeable battery during the first and second ~~calibration~~ charging stages;

threshold detector means configured to output a charge counter increment signal ~~a unit count of charge~~ upon detection of a predetermined level of charge ~~indicated by the output from~~ said integrator; and

a correlator configured to correlate a total number of unit counts of charge during said first and second calibration stages with said predetermined maximum voltage and said predetermined minimum current.

27. (Currently Amended) The apparatus according to claim 26, wherein said second ~~calibration~~ charging stage commences after completion of said first ~~calibration~~ charging stage.

28. (Currently Amended) A computer readable medium, having a program recorded thereon, where the program is configured to make a computer execute a procedure to operate a rechargeable battery, said procedure comprising the steps of:

characterizing the battery comprising the sub-steps of:

(i) delivering, during a first charging stage, a substantially constant current to said rechargeable battery until said rechargeable battery reaches-is charged to a predetermined maximum voltage;

(ii) delivering, during a second charging stage, a decreasing step-function current flow to maintain a substantially constant voltage to said by said rechargeable battery until a predetermined minimum current is delivered to said rechargeable battery; and

(iii) determining a delivered charge value of current delivered to said rechargeable battery by sub-steps (i) and (ii); and

cyclically charging and discharging of said rechargeable battery according to said determined delivered charge value.

29. (Currently Amended) A battery charger for an electronic device, said battery charger comprising:

a rechargeable battery source configured for cyclical charging and discharging by to cyclically charge and discharge said electronic device;

a measuring circuit for measuring configured to measure one or more parametric data during said charging and discharging;

an auxiliary power source being able configured to power said electronic device when said rechargeable battery source is removed from operation of the device independently of said rechargeable battery source; and

a testing circuit for testing configured to test said measuring circuit for offset error while said rechargeable battery is removed from operation of the device; and

a reducer circuit for reducing configured to isolate said rechargeable battery from said device by reducing current flow from said rechargeable battery to said device to a minimal value;

wherein said testing circuit is enabled during said isolation of said rechargeable battery from said device.

30. (Currently Amended) The battery charger according to claim 29, wherein said testing circuit ~~corrects~~ is further configured to correct any offset error ~~before current is restored to said device from said rechargeable battery~~ while said rechargeable battery source is isolated from said device.

31. (Original) The battery charger according to claim 29, wherein said parametric data includes cumulative charge.

32. (Original) The battery charger according to claim 29, wherein said electronic device is an implantable medical device.

33. (Currently Amended) The battery charger according to ~~claim 29~~ claim 32, wherein the implantable medical device is a receiver/stimulator unit of prosthetic hearing implant system.

34. (Currently Amended) A prosthetic hearing implant system comprising:

a battery charger comprising:

a rechargeable battery source configured ~~for cyclical charging and discharging by~~
to cyclically charge and discharge said electronic device battery charger;

a measuring circuit ~~for measuring~~ configured to measure one or more parametric
data during said charging and discharging;

an auxiliary power source ~~being able to~~ configured to power said electronic device
battery charger when said rechargeable battery source is removed from operation of the battery
charger independently of said rechargeable battery source; and

a testing circuit ~~for testing~~ configured to test said measuring circuit for offset error
while said rechargeable battery is removed from operation of the battery charger; and

a disconnection circuit ~~for isolating~~ configured to isolate current flow from said
rechargeable battery to said ~~device~~ battery charger;

wherein said testing circuit is enabled during said isolation of said rechargeable
battery from said ~~device~~ battery charger.

35. (Currently Amended) The prosthetic hearing implant system according to claim 34,
~~comprising:~~

~~a battery charger wherein said testing circuit corrects~~ is further configured to correct any offset
error ~~before current is restored to said device from said rechargeable battery while said~~
rechargeable battery source is isolated from said device.

36. (Currently Amended) The prosthetic hearing implant system according to claim 34,
~~comprising:~~

~~the battery charger wherein said~~ one or more parametric data includes cumulative charge.

37. (Currently Amended) The prosthetic hearing implant system according to claim 34,
~~comprising:~~

~~the battery charger wherein said electronic device is an implantable medical device.~~

38. (Currently Amended) The prosthetic hearing implant system according to ~~claim 34~~ claim 37,
~~comprising:~~

~~the battery charger~~ wherein the implantable method device is a receiver/stimulator unit of
prosthetic hearing implant system.